



UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Date: September 23, 2003

STEPHEN F. GASS, DAVID S. D'ASCENZO
and DAVID A. FANNING

Serial No. : 09/929,238

Examiner Thomas J. Druan, Jr.

Filed : August 13, 2001

Group Art Unit 3724

For : MITER SAW WITH IMPROVED SAFETY SYSTEM

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

DECLARATION OF STEPHEN F. GASS

I, Stephen F. Gass, declare as follows:

1. I am a named inventor in the above-identified application.
2. The claims currently pending in the above-identified application describe miter saws with brake systems and miter saws with systems that detect accidental contact or an unsafe condition between a person and a blade and then take some action to minimize potential injury, such as creating an impulse against further movement of the blade into the cutting zone or stopping the rotation of the blade.
3. In an Office Action mailed May 27, 2003, the Examiner rejected several claims under 35 U.S.C. §103(a) in light of various combinations of U.S. Patent No. 4,637,289, U.S. Patent No. 3,946,631 to Malm, U.S. Patent No. 4,117,752 to Yoneda, and U.S. Patent No. 5,272,949 to McCullough. I am filing this declaration to traverse those rejections and to submit evidence that several conclusions in the Office Actions are incorrect.

4. My educational background is in physics. In 1986 I earned a Bachelor of Science degree in physics from Oregon State University, and graduated summa cum laude. In 1990 I was awarded a Ph.D. degree in physics from the University of California San Diego.

5. The Yoneda patent discloses a band saw with an emergency system for stopping the blade. The blade is a metal band that travels around wheels. The emergency system includes an electric circuit intended to recognize something the patent describes as "the electric charge potential" of a human body if an operator contacts the blade. The system also includes "an electromagnetic brake" to stop a pulley connected to a motor, and "an electromagnetic clamp brake" to clamp the band blade. Band saws are typically used for ripping (cutting wood along its length with the grain of the wood) or for cutting curves. Band saws are operated by a user pushing a workpiece against the blade.

6. The Examiner states, "If the brake mechanism [of Yoneda] were located on a portion of the rotating cutting blade [of a miter saw] that was going towards the cutting zone, the angular momentum of the blade would create an opposite impulse upon application of a brake and therefore the blade would move away from the cutting zone. " (See page 4 of the Office Action.) That is an incorrect statement. If a brake mounted anywhere on the swing arm of a miter saw engaged the rotating blade, the angular momentum of the blade would tend to move the swing arm and the blade further into the cutting zone regardless of where the brake was positioned relative to the blade. Specifically, when the brake engaged the blade, the angular momentum of the blade would be transferred to the swing arm through the brake. The swing arm would then try to spin in the same direction as the blade due to the conservation of angular momentum. Rotation of the swing arm in the direction of the rotation of the blade would pivot the swing arm around its connection with the base or support structure and move it and the blade

down into the cutting zone because that is the only movement it can make in the same direction as the blade was spinning.

7. I have actually built and tested miter saws with brakes adjacent various portions of a rotating blade, including portions of the blade rotating toward a cutting zone. In each test, the blade moved toward the work surface of the miter saw when the brake engaged the blade. These tests confirm that if a brake system as shown in Yoneda were installed on a typical miter saw swing arm, regardless of the position of the brake adjacent the blade, then the blade would move toward the work surface of the miter saw - not away from it - due to the conservation of angular momentum.

8. I have built several saws that include the technology which is the subject of the claims currently pending in the above-identified application. Those saws have been recognized with the following awards:

- Chairman's Commendation. The U.S. Consumer Product Safety Commission has reviewed and tested one of the saws. As a result of that review, Chairman Ann Brown awarded the saw a Chairman's Commendation for significant contributions to product safety. Only a handful of products have ever won that award. That award was reported nationally on CNN Headline News.

- Challenger's Award. At an International Woodworking Fair, in Atlanta, Georgia, saws constructed as required by the currently pending claims won the Challenger's Award, which is the woodworking industry's highest honor. It recognizes the most innovative and technically advanced improvements to woodworking equipment.

- Popular Science – One of the 100 Best New Innovations. The magazine *Popular Science* identified the saws as one of the 100 best new innovations of 2002.

- Workbench Magazine – One of the Top 10 Tools for 2003. *Workbench* magazine included the saws on its list of the top 10 innovative tools for 2003.

- Woodwork Institute of California Endorsement. The Woodwork Institute of California has endorsed saws constructed as required by the pending claims, stating:

As a Trade Association in the construction industry (representing over 250 manufacturers of architectural millwork with an excess of 4,000 employees, all of whom use saws of one type or another) we find your SawStop technology and its potential of eliminating or reducing worker injury of extreme significance. Generally, we would not endorse a commercial product; however the potential benefit to our members and their employees of implementing the SawStop technology on the tools used within our industry overrides such. (Letter from Stanley R. Gustafson, CEO/Secretary, Woodwork Institute of California, to Stephen Gass.)

- Editor's Choice Award, Tools of the Trade. The magazine *Tools of the Trade* awarded its Editor's Choice Award to the saws in recognition of the significance of the new technology.

9. The saws I have built have also been the subject of extensive media coverage, including national coverage by CNN Headline News, by the television program NEXT@CNN, by the Associated Press, and by Paul Harvey on the ABC Radio Network. Numerous magazines around the world have published reports about the saws and said the saws were "revolutionary," "unique" and "ingenious." The media has specifically mentioned the feature of moving a blade away from a work surface. Examples of quotes from magazines are set forth below (the media typically refers to the saws by the name "SawStop"):

- "SawStop: A revolutionary safety device," *FDM*, December 2000, p. 88.
- "This magazine will never endorse a material or machine. We're here to provide an objective report on technologies that are used by secondary plastics processors.

Having said that, I was floored by an invention I saw at the recent International Woodworking Fair," *Plastics Machining & Fabricating*, September 2000, p. 58.

- "Revolutionary SawStop May Change the Woodshop,"
- "the next revolutionary safety device," *Woodshop News*, January 2002, p. T30.
- "The ingenious device ..." and "When called into use, the SawStop activates a spring that pulls the saw blade down into a replaceable plastic block ...," *Wood & Wood Products*, October 2000, p. 58.

10. I hereby declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

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STEPHEN F. GASS